

What is claimed is:

1. A method of display for use with a graphical user interface of a personal computer, the method comprising the steps of:

identifying a maximum display, wherein a size of the maximum display is based at least in part on at least one of a probable-largest required size and an absolute-largest required size;

positioning the maximum display in a best manner, wherein the maximum display minimally overlays a work area of a display zone of an active display, and wherein the maximum display does not extend outside the display zone; and

displaying a control path selected by the user based at least in part on a position of the maximum display, wherein the control path does not extend outside the display zone,

wherein the display zone corresponds to a delimited area of the active display within which the control path may be rendered, and

wherein the work area corresponds to an area of the display zone presumed to be of interest to the user, and

wherein the plurality of control paths selectable by the user comprises a plurality of permitted, generation ordered, sequences of differing controls, wherein a control corresponds to a displayable graphic having at least a shell area for presentation of at least one of choice selections and textual matter.

2. The method of claim 1, further comprising the steps of:

identifying a center of the work area;

identifying a center of the display zone;

translating an origin of a coordinate system of the active display to coincide with the center of the work area;

identifying a quadrant of the coordinate system containing the center of the display zone; and

positioning a reference point of the maximum display within the quadrant of the coordinate system containing the center of the display zone.

3. The method of claim 2, wherein the reference point is a reference corner of the maximum display.

4. The method of claim 1, further comprising the steps of:

identifying a center of the work area;

identifying a center of the display zone;

translating an origin of a coordinate system of the active display to coincide with the center of the display zone;

identifying a quadrant of the coordinate system containing the center of the work area; and

positioning a reference point of the maximum display within the quadrant of the coordinate system containing the center of the work area.

5. The method of claim 4, wherein the reference point is a reference corner of the maximum display.

6. The method of claim 1, wherein the maximum display is positioned within the display zone based at least in part on a plurality of at least one user supplied parameters.

7. The method of claim 1, wherein the maximum display is positioned within the display zone based at least in part on:

a first user-supplied percentage parameter applied to a horizontal dimension of the work area; and

a second user-supplied percentage parameter applied to a vertical dimension of the work area.

8. The method of claim 6, further comprising the step of selectively overriding the plurality of at least one user supplied parameter to ensure that the maximum display does not extend outside the display zone.

9. The method of claim 1, wherein the control has an associated control subsystem that remains active during an activation interval controlled by the user and during which a succession of control instances may be displayed corresponding to a permitted control path, wherein the control subsystem operates according to a control subsystem method, the method comprising the steps of:

a) defining a maximum shell, wherein the maximum shell defines a fixed coordinate within the maximum display, and wherein the fixed coordinate remains fixed during the activation interval unless the size of the maximum display is insufficient to permit display of the control path in the best manner, whereby the control path does not extend outside the display zone; and

b) positioning all control instances displayed during the activation interval relative to the fixed coordinate.

10. The method of claim 9, wherein the maximum shell is defined based on a maximum shell definition method, the method comprising the steps of:

a) identifying a shell having a first greatest requirement associated with a first dimensional characteristic of the control shell; and

b) identifying a shell having a second greatest requirement associated with a second dimensional characteristic of the control shell;

wherein first dimensional characteristics and second dimensional characteristics of control shells correlate to describe areas of control shells, and

wherein the first dimensional requirement and second dimensional requirement are determined based at least in part on at least one of a majority of the control shells and all of the control shells.

11. The method of claim 10, wherein the first dimensional characteristic is height, wherein the second dimensional characteristic is width, wherein the first greatest requirement is the greatest height, and wherein the second greatest requirement is the greatest width.

12. The method of claim 1, the method further comprising the step of defining an anchor-point for each of a plurality of at least one control type based on a plurality of at least one user supplied parameters.

13. The method of claim 12, wherein the anchor-point is positioned within a shell of each of a plurality of at least one differing control types based at least in part on:

a first user-supplied percentage parameter applied to the first dimensional characteristic of the shell; and

a second user-supplied percentage parameter applied to the second dimensional characteristic of the shell.

14. The method of claim 9, the method further comprising the step of defining an anchor-point for each of a plurality of at least one control type based on a plurality of at least one user supplied parameters, wherein the associated control subsystem

produces the control display, and wherein the anchor point of a current control is positioned to coincide with the fixed point,

wherein the current control corresponds to the control of a control path that is the control most recently displayed.

15. The method of claim 14, wherein the associated control subsystem affects a repositioning of an ancestor display instance of an ancestor control associated with a control path of the current control, wherein the repositioning affects a displacement of the ancestor display instance that is a predetermined distance to a side of a child display instance of a child control associated with the ancestor control, that is upward in relation to the child display instance, and that is behind the child display instance.

16. The method of claim 15, wherein the current display instance and each ancestor display instance has a title bar display, and wherein the displacement of the ancestor display instance that is upward in relation to the child display instance is not less than the height of the title bar display, and wherein each title bar display of the current display instance and each ancestor display instance is simultaneously visible.

17. The method of claim 16, wherein each ancestor display instance is re-dimensioned to a dimension of the current display instance.

18. The method of claim 17, wherein at least one ancestor display instance is provided with a predetermined visual treatment, wherein the predetermined visual treatment communicates an absence of display content.

19. The method of claim 1, wherein a current control has an exit capability, wherein the exit capability permits removal of a graphical display that results from rendering the

control path to the active display, and wherein the exit capability permits a return of subsequent computer processing to a calling application, and

wherein the current control corresponds to the control of a control path that is the control most recently displayed.

20. The method of claim 1, wherein a current control has an abort capability, wherein the abort capability permits a reversal of each service performed during a current activation of a control subsystem, and wherein the abort capability permits removal of a graphical display that results from rendering the control path to the active display, and wherein the abort capability permits a return of subsequent computer processing to a calling application,

wherein the reversal affects a return of the calling application without provision of any services selected during manipulation of the control path to a system state existing immediately prior to performance of a choice selection, and

wherein the current control corresponds to the control of a control path that is the control most recently displayed.

21. The method of claim 1, wherein the current control has a done capability, wherein the done capability of the current control is at least one of explicit and implicit, and wherein the done capability of the current control permits a search for an ancestor control associated with a control path of the current control that is a most recent ancestor control, wherein the most recent ancestor control has the done capability, wherein the done capability of the ancestor control is explicit, and wherein the done capability of the current control permits removal of all controls descending from the most recent ancestor control, and wherein the done capability permits display of the most recent ancestor control and its antecedents, and

wherein the current control corresponds to the control of a control path that is the control most recently displayed.

22. The method of claim 1, wherein a current control has a done capability, wherein the done capability of the current control is at least one of explicit and implicit, and wherein the done capability of the current control permits a search for an ancestor control associated with a control path of the current control that is the most recent ancestor control, wherein the most recent ancestor control has the done capability, wherein the done capability of the ancestor control is explicit, and wherein the done capability of the current control permits removal of a graphical display that results from rendering the control path to the active display, and wherein the done capability of the current control permits a return of subsequent computer processing to a calling application, and wherein the removal and the return are affected by the done capability of the current control if the search is not successful, and

wherein the current control corresponds to the control of a control path that is the control most recently displayed.

23. The method of claim 1, wherein a current control has a cancel capability, wherein the cancel capability permits reversal of all services in a plurality of services performed by a control subsystem, wherein the plurality of services were performed by the control subsystem in response to manipulation of the current control by the user, and wherein the cancel capability permits a search for an ancestor control associated with a control path of the current control that is the most recent ancestor control, wherein the most recent ancestor control has a done capability, wherein the done capability of the most recent ancestor control is explicit, and wherein the cancel capability permits removal of all controls descending from the most recent ancestor

control, and wherein the done capability permits display of the most recent ancestor control and its antecedents, and

wherein the current control corresponds to the control of a control path that is the control most recently displayed.

24. The method of claim 1, wherein a current control has a cancel capability, wherein the cancel capability permits reversal of all services in a plurality of services performed by a control subsystem, wherein the plurality of services were performed by the control subsystem in response to manipulation of the current control by the user, and wherein the cancel capability permits a search for an ancestor control associated with a control path of the current control that is the most recent ancestor control, wherein the most recent ancestor control has a done capability, wherein the done capability of the most recent ancestor control is explicit, and wherein the cancel capability permits removal of a graphical display that results from rendering the control path to the active display, and wherein the done capability of the current control permits a return of subsequent computer processing to a calling application, and wherein the removal and the return are affected by the cancel capability of the current control if the search is not successful, and

wherein the current control corresponds to the control of a control path that is the control most recently displayed.

25. The method of claim 1, wherein a current control has a multi-select capability, wherein the multi-select capability permits the user to convert to a multiple selection mode from a single selection mode at an option of the user,

wherein the multiple selection mode permits the user to perform multiple selections from the current control, and

wherein the current control corresponds to the control of a control path that is the control most recently displayed.

26. The method of claim 1, wherein a current control has a multi-select capability wherein the multi-select capability is configurable by the user for permitting the user to perform multiple selections, and

wherein the current control corresponds to the control of a control path that is the control most recently displayed.

27. The method of claim 1, wherein a current control has an undo capability, wherein the undo capability permits a reversal of a last service performed by a control subsystem in response to user manipulation from at least one of the current control and a previously current control,

wherein the current control corresponds to the control of a control path that is the control most recently displayed.

28. A user-interface for use with a computer, the user-interface comprising:
an operating system;
an input means in communication with said operating system for accepting input from a user;
an active display in communication with said operating system;
a plurality of controls in communication with said operating system, said controls corresponding to graphics displayable to said active display, wherein the graphics each have a shell area for presentation of at least one of choice-selections and textual matter;
at least one control path associated with said plurality of controls, said control path corresponding to a permitted, generation ordered sequence of said controls;

a display zone associated with said active display, said display zone corresponding to a delimited area of said active display for rendering said control path as a control display to said active display, wherein said control path has a first dimensional characteristic and a second dimensional characteristic, wherein the first dimensional characteristic and the second dimensional characteristic correlate to describe an area of the control display; and

a work area associated with said display zone, said work area corresponding to an area of said display zone of interest to the user,

wherein said operating system manages said input means, said active display, and said plurality of controls in a best manner permitting a best rendering of an entirety of the control display specified by the user within said display zone, wherein the control display minimally overlays said work area.

29. The user-interface of claim 28, wherein said operating system employs a display method for achieving the best rendering, the method comprising the steps of:

identifying a maximum display, wherein a size of the maximum display is based at least in part on at least one of a first greatest requirement associated with the first dimensional characteristic of a selectable control and a second greatest requirement associated with a second dimensional characteristic of a selectable control;

positioning the maximum display in the best manner, wherein the maximum display minimally overlays said work area of said display zone of said active display, and wherein the maximum display does not extend outside said display zone; and

displaying said control path selected by the user based at least in part on a position of the maximum display region, wherein said control path does not extend outside said display zone.

30. The user-interface of claim 29, wherein the display method further comprises the steps of:

- identifying a center of said work area;
- identifying a center of said display zone;
- translating an origin of a coordinate system of said active display to coincide with the center of said work area;
- identifying a quadrant of the coordinate system containing the center of said display zone; and
- positioning a reference point of the maximum display within the quadrant of the coordinate system containing the center of said display zone

31. The user-interface of claim 30, wherein the reference point is a reference corner of the maximum display.

32. The user-interface of claim 29, wherein the display method further comprises the steps of:

- identifying a center of said work area;
- identifying a center of said display zone;
- translating an origin of a coordinate system of said active display to coincide with the center of said display zone;
- identifying a quadrant of the coordinate system containing the center of said work area; and
- positioning a reference point of the maximum display within the quadrant of the coordinate system containing the center of said work area.

33. The user interface of claim 28, wherein the best rendering includes a positioning of the control display as near said work area as possible while maintaining a minimal overlay .

34. The user interface of claim 28, wherein a current control corresponding to the control of said control path that is the control most recently displayed has navigation capabilities.

35. The user interface of claim 34, wherein the navigation capabilities include at least one of a multi-select capability and an undo capability,

wherein the multi-select capability permits the user to select a plurality of services from the current control for performance by a control subsystem, and

wherein the undo capability permits a reversal of at least one of a last service and a last plurality of services performed by a control subsystem in response to user manipulation from at least one of the current control and a previously current control.

36. The user interface of claim 34, wherein the navigation capabilities include at least one of a done capability and an exit capability,

wherein a done capability permits at least one of:

a) removal of all controls descending from a most recent ancestor control explicitly having the done capability and display of the most recent ancestor control and its antecedents, and

b) removal of the control display and return to a calling application, and

wherein the exit capability permits removal of the control display and return to the calling application.

37. The user interface of claim 36, wherein the done capability performs a search for the most recent ancestor control and performs removal of the control display and return to the calling application in the event the search is not successful.

38. The user interface of claim 34, wherein navigation capabilities include at least one of an abort capability and a cancel capability,

wherein the abort capability permits reversal of all services performed during a current activation of an associated control subsystem of the current control, removal of the control display, and return to a calling application, and

wherein the cancel capability permits reversal of all services performed during a current activation of an associated control subsystem of the current control and at least one of:

- a) removal of all controls descending from a most recent ancestor control explicitly having the done capability and display of the most recent ancestor control and its antecedents, and
- b) removal of the control display and return to a calling application.

39. The user interface of claim 38, wherein the cancel capability performs a search for the most recent ancestor control and performs removal of the control display and return to the calling application in the event the search is not successful.

40. The user interface of claim 28, wherein the control display is rendered in a manner permitting display of the current control in reference to a fixed point, wherein each ancestor control is displayed behind its child control and at least one of offset in a first direction relative to its child control and offset in a second direction relative to its child control.

41. The user interface of claim 40, wherein the fixed point remains fixed during an activation interval of an associated control subsystem unless repositioning of the fixed point is required to facilitate the best rendering.

42. The user interface of claim 29, wherein the display method further comprises the step of defining an anchor-point for each of a plurality of at least one control type based on a plurality of at least one user supplied parameters.

43. The user interface of claim 42, wherein the anchor-point is positioned within a shell of each of a plurality of at least one differing control types based at least in part on:

a first user-supplied percentage parameter applied to the first dimensional characteristic of the shell; and

a second user-supplied percentage parameter applied to the second dimensional characteristic of the shell.

44. The user interface of claim 29, wherein the first greatest requirement and the second greatest requirement are determined based at least in part on dimensional characteristics of all control paths selectable by the user.

45. The user interface of claim 29, wherein the first greatest requirement and the second greatest requirement are determined based at least in part on dimensional characteristics of a majority of control paths selectable by the user, wherein a small population of control paths selectable by a user having exceptionally large requirements regarding at least one dimensional characteristic are excluded from the majority.

46. The user interface of claim 29,
wherein an absolute determination regarding the first greatest requirement and the second greatest requirement are determined based on dimensional characteristics of all control paths selectable by the user,
wherein a probable determination regarding the first greatest requirement and the second greatest requirement are determined based on dimensional characteristics of a majority of control paths selectable by the user, wherein a small population of control paths selectable by a user having exceptionally large requirements regarding at least one dimensional characteristic are excluded from the majority, and
wherein the size of the maximum display is based on the probable determination unless the size of the maximum display is insufficient to permit display of the control path in the best manner, and
wherein the size of the maximum display is based on the absolute determination if the size of the maximum display is insufficient to permit display of the control path in the best manner.